

CLAIMS

What is claimed is:

- 1 1. A fan tray, comprising:
2 a multiple fan chassis having a plurality of fan supports, wherein the chassis is
3 mountable in an electronic device and is movable to a withdrawn access position adapted to
4 provide access to the plurality of fan supports and, wherein the multiple fan chassis comprises
5 airflow passages directed from the plurality of fan supports into the electronic device in the
6 withdrawn access position.
- 1 2. The fan tray set forth in claim 1, comprising a continuous power connector
2 adapted to maintain power to the multiple fan chassis in the withdrawn access position.
- 1 3. The fan tray set forth in claim 1, wherein the multiple fan chassis comprises at
2 least one mounting latch adapted to secure the multiple fan chassis to the electronic device.
- 1 4. The fan tray set forth in claim 1, wherein the plurality of fan supports comprise a
2 latch-mountable fan receptacle.
- 1 5. The fan tray set forth in claim 1, wherein the plurality of fan supports comprise a
2 lateral fan receptacle.
- 1 6. The fan tray set forth in claim 1, wherein the plurality of fan supports comprise a
2 side-mounting mechanism disposed on at least two different sides of the multiple fan chassis.
- 1 7. The fan tray set forth in claim 1, wherein the plurality of fan supports comprise a
2 first set of sequential fan mounts and a second set of sequential fan mounts, wherein the first
3 and second sets of sequential fan mounts are adapted to orient fans to provide first and second
4 airflows that are substantially parallel with one another.
- 1 8. The fan tray set forth in claim 1, comprising a fan mounted to each of the
2 plurality of fan supports.

1 9. A system, comprising:
2 a chassis;
3 a multiple fan tray disposed in the chassis and movable between an installed position
4 and an extracted position, wherein the multiple fan tray comprises an airflow passage
5 pneumatically coupled with the chassis in both the installed position and the extracted position.

1 10. The system set forth in claim 9, wherein the chassis comprises a computer.

1 11. The system set forth in claim 9, wherein the chassis comprises a rack mount
2 structure.

1 12. The system set forth in claim 9, wherein the chassis comprises a rack mountable
2 device.

1 13. The system set forth in claim 9, wherein the multiple fan tray comprises a
2 plurality of fan receptacles disposed on different sides of the multiple fan tray.

1 14. The system set forth in claim 9, wherein the multiple fan tray comprises a
2 plurality of fans mounted in series.

1 15. The system set forth in claim 9, wherein the multiple fan tray comprises first and
2 second sets of fans mounted in series, wherein the first set is substantially parallel to the second
3 set.

1 16. The system set forth in claim 9, comprising a power connector extendable
2 between the installed position and the extracted position to maintain power to the multiple fan
3 chassis.

1 17. A fan assembly for cooling an electronic device, comprising:
2 means for jointly mounting a plurality of fans in the electronic device between inserted
3 and removed positions; and
4 means for maintaining continuous air flow from at least one fan of the plurality of fans
5 in both the inserted and removed positions.

1 18. The fan assembly set forth in claim 17, wherein the means for maintaining
2 continuous air flow comprise means for providing continuous power to the at least one fan in
3 both the inserted and removed positions.

1 19. The fan assembly set forth in claim 17, wherein the means for maintaining
2 continuous air flow comprise means for directing the air flow into the electronic device in both
3 the inserted and removed positions.

1 20. A method of operating an electronic device, comprising:
2 removably inserting into the electronic device a multiple fan assembly that is adapted to
3 maintain airflow through the electronic device in both an inserted position and in a withdrawn
4 position.

1 21. The method set forth in claim 20, comprising connecting between the multiple
2 fan assembly and the electronic device a power connector that is adapted to maintain power to
3 the multiple fan assembly in both the inserted position and in the withdrawn position.

1 22. The method set forth in claim 20, wherein removably inserting comprises
2 slidably moving the multiple fan assembly in alignment with an airflow direction of fans
3 disposed in the multiple fan assembly.

1 23. The method set forth in claim 20, comprising installing at least one fan into the
2 multiple fan assembly in a direction substantially perpendicular to a flow direction of the at
3 least one fan.

1 24. The method set forth in claim 20, comprising replacing at least one problematic
2 fan in the multiple fan assembly with a replacement fan during operation of remaining fans
3 disposed in the multiple fan assembly.

1 25. A method of manufacturing a cooling system for an electronic device,
2 comprising:

3 providing a multiple fan chassis movably mountable in the electronic device between an
4 extended position and an installed position such that airflow is continuously directed through
5 the electronic device in both the extended position and in the installed position.

1 26. The method set forth in claim 25, wherein providing the multiple fan chassis
2 comprises orienting fan receptacles to provide airflow aligned with movement of the multiple
3 fan chassis between the extended and installed positions.

1 27. The method set forth in claim 25, wherein providing the multiple fan chassis
2 comprises forming first and second sequential sets of fan mounts in the multiple fan chassis,
3 such that the first sequential set is substantially parallel to the second sequential set.

1 28. The method set forth in claim 25, wherein providing the multiple fan chassis
2 comprises forming a lateral fan mounting mechanism on at least two different sides of the
3 multiple fan chassis.

1 29. The method set forth in claim 25, comprising providing an extendible power
2 connector that is adapted to extend a range of motion corresponding to the distance between the
3 extended position and the installed position.